

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-37 (cancelled)

38. (new) A method for modifying a condition of a material, comprising:

obtaining a plurality of sensor readings associated with the condition of the material as the material moves; and

adjusting a load applied to the material as the material moves based on the plurality of sensor readings to modify the condition of the material toward a desired condition.

39. (new) A method as defined in claim 38, further comprising generating a distance deviation value based on the plurality of sensor readings.

40. (new) A method as defined in claim 38, further comprising acquiring a travel length value associated with the material as the material moves.

41. (new) A method as defined in claim 40, further comprising generating topographical information associated with a surface of the material based on the travel length value and the plurality of sensor readings.

42. (new) A method as defined in claim 38, further comprising determining a certification level of the material based on the plurality of sensor readings.

43. (new) A method as defined in claim 38, wherein the plurality of sensor readings are generated by at least one of a contact sensor and a non-contact sensor.

44. (new) A method as defined in claim 38, wherein adjusting the load applied to the material includes adjusting a position of a workroll to vary the load applied to the material.

45. (new) A method as defined in claim 38, wherein the material is a strip material.

46. (new) A system for modifying the flatness properties of a continuously moving material, the system comprising:

a processor system; and

a memory communicatively coupled to the processor system, the memory

including stored instructions that enable the processor system to:

obtain a plurality of sensor readings associated with the condition of the material as the material moves; and

adjust a load applied to the material as the material moves based on the plurality of sensor readings to modify the condition of the material toward a desired condition.

47. (new) A system as defined in claim 46, wherein the stored instructions enable the processor system to generate a distance deviation value based on the plurality of sensor readings.

48. (new) A system as defined in claim 46, wherein the stored instructions enable the processor system to acquire a travel length value associated with the material as the material moves.

49. (new) A system as defined in claim 48, wherein the stored instructions enable the processor system to generate topographical information associated with a surface of the material based on the travel length value and the plurality of sensor readings.

50. (new) A system as defined in claim 46, wherein the stored instructions enable the processor system to determine a certification level of the material based on the plurality of sensor readings.

51. (new) A system as defined in claim 46, wherein the plurality of sensor readings are generated by at least one of a contact sensor and a non-contact sensor.

52. (new) A system as defined in claim 46, wherein the stored instructions enable the processor system to adjust a position of a workroll to vary the load applied to the material.

53. (new) A system as defined in claim 46, wherein the material is a strip material.

54. (new) A machine accessible medium having instructions stored thereon that, when executed, cause a machine to:

obtain a plurality of sensor readings associated with the condition of the material as the material moves; and

adjust a load applied to the material as the material moves based on the plurality of sensor readings to modify the condition of the material toward a desired condition.

55. (new) A machine accessible medium as defined in claim 54 having instructions stored thereon that, when executed, cause the machine to generate a distance deviation value based on the plurality of sensor readings.

56. (new) A machine accessible medium as defined in claim 54 having instructions stored thereon that, when executed, cause the machine to acquire a travel length value associated with the material as the material moves.

57. (new) A machine accessible medium as defined in claim 56 having instructions stored thereon that, when executed, cause the machine to generate topographical information associated with a surface of the material based on the travel length value and the plurality of sensor readings.

58. (new) A machine accessible medium as defined in claim 54 having instructions stored thereon that, when executed, cause the machine to determine a certification level of the material based on the plurality of sensor readings.

59. (new) A machine accessible medium as defined in claim 54 having instructions stored thereon that, when executed, cause the machine to obtain the plurality of sensor readings from at least one of a contact sensor and a non-contact sensor.

60. (new) A machine accessible medium as defined in claim 54 having instructions stored thereon that, when executed, cause the machine to adjust a position of a workroll to vary the load applied to the material.

61. (new) A method of leveling a material, comprising:
translating the material past a sensor;
determining a plurality of surface distance values based on the location of the sensor and a location of a surface of the material; and
varying a force applied to the surface of the material in response to the plurality of surface distance values.

62. (new) A method as defined in claim 61, wherein varying the force applied to the surface of the material comprises varying a workroll plunge.

63. (new) A method as defined in claim 61, wherein varying the compression force applied to the surface of the material comprises varying a workroll center distance.

64. (new) A method as defined in claim 61, further comprising determining a plurality of zones associated with the surface of the material.

65. (new) A method as defined in claim 64, further comprising determining a plurality of peak values for each of the plurality of zones based on the plurality of surface distances values.

66. (new) A method as defined in claim 65, wherein determining the plurality of peak values includes determining a plurality of distance deviation values based on the plurality of surface distance values.

67. (new) A method as defined in claim 65, wherein varying the force applied to the surface of the material is based on the plurality of peak values.

68. (new) A method as defined in claim 61, further comprising acquiring a traveled length value of the material using an encoder.

69. (new) A method as defined in claim 68, wherein the sensor is at least one of a contact sensor and a non-contact sensor.

70. (new) A method as defined in claim 61, further comprising determining a certification level of the material based on the flatness properties of the material.

71. (new) A method as defined in claim 61, wherein the compression force applied to the material is caused by a workroll.

72. (new) A system for conditioning a moving material, the system comprising:
a sensor that detects a distance to a surface of the moving material;
a controller communicatively coupled to the sensor and configured to obtain a distance value associated with the distance to the surface of the moving material; and
a roller operatively coupled to the controller, wherein the controller varies a position of the roller to vary a load applied to the moving material to achieve a desired condition of the moving material.
73. (new) A system as defined in claim 72, further comprising an encoder communicatively coupled to the controller and configured to measure a travel length value associated with the moving material.
74. (new) A system as defined in claim 72, wherein the sensor is one of a contact sensor and a non-contact sensor.
75. (new) A system as defined in claim 72, wherein the moving material is a strip material.
76. (new) A system as defined in claim 72, wherein the load is associated with at least one of a threshold distance value and an average distance value generated based on the distance value.

77. (new) A method of leveling strip material, the method comprising:
- moving the strip material past a first sensor and a second sensor;
 - obtaining a first plurality of readings from the first sensor;
 - obtaining a second plurality of readings from the second sensor;
 - detecting a leveling condition based on the first plurality of readings and the second plurality of readings; and
 - generating an electrical signal to cause an adjustment of a load applied to the strip material in response to detecting the leveling defect.
78. (new) A method as defined in claim 77, wherein detecting the leveling condition comprises:
- determining a first average for the first plurality of readings;
 - determining a second average for the second plurality of readings; and
 - determining a difference between the first average and the second average.
79. (new) A method as defined in claim 77, wherein moving the strip material past the first sensor and the second sensor comprises moving the strip material past at least one non-contact sensor.
80. (new) A method as defined in claim 77, wherein moving the strip material past the first sensor and the second sensor comprises moving the strip material past at least one of a sonic sensor, an optical sensor, and a riding needle sensor.

81. (new) A method as defined in claim 77, further comprising determining a length associated with the strip material based on an input from an encoder.
82. (new) A method as defined in claim 77, wherein causing a leveler workroll adjustment comprises causing a change in a workroll plunge.
83. (new) A method as defined in claim 82, wherein causing the change in the workroll plunge comprises adjusting a hydraulic cylinder operatively coupled to a backup bearing.
84. (new) A method as defined in claim 77, wherein causing the adjustment of the load comprises causing a change in a workroll center distance.
85. (new) A method of conditioning a material, the method comprising:
moving the material past a sensor;
detecting a material condition associated with the material as the material passes the sensor; and
generating an electrical signal to cause an adjustment of a force applied to the material based on the material condition.
86. (new) A method as defined in claim 85, wherein moving the material past the sensor comprises moving the material past at least one of a sonic sensor and an optical sensor.

87. (new) A method as defined in claim 85, wherein detecting the material condition associated with the material as the material passes the sensor comprises determining a distance between a first sensor reading location and a second sensor reading location.

88. (new) A method as defined in claim 87, wherein determining the distance between the first sensor reading position and the second sensor reading position comprises receiving a signal from an encoder.

89. (new) A method as defined in claim 85, wherein causing the adjustment in the force applied to the material comprises causing a change in a workroll plunge.

90. (new) A method as defined in claim 89, wherein causing the change in the workroll plunge comprises adjusting a hydraulic cylinder.

91. (new) A method as defined in claim 85, wherein causing the adjustment in the compression force applied to the material comprises causing a change in a workroll center distance.

92. (new) An apparatus to condition a material, comprising:
a roller configured to condition the material;
a sensor positioned to measure a distance based on the location of a surface of the material and the location of the sensor; and
a controller operatively coupled to the roller and the sensor, wherein the controller is configured to generate an electrical signal in response to the distance.
93. (new) An apparatus as defined in claim 92, further comprising a hydraulic cylinder operatively coupled to the controller to cause an adjustment to the roller in response to detecting the distance.
94. (new) An apparatus as defined in claim 93, further comprising a backup bearing operatively coupled to the hydraulic cylinder and the roller, wherein the backup bearing causes a change in a plunge associated with the roller.
95. (new) An apparatus as defined in claim 92, wherein the sensor comprises an acoustic sensor.
96. (new) An apparatus as defined in claim 92, wherein the sensor comprises an optical sensor.

97. (new) An apparatus as defined in claim 92, further comprising an encoder operatively coupled to the controller, wherein the controller is configured to use the encoder to determine a distance between a first sensor reading location and a second sensor reading location.

98. (new) An apparatus as defined in claim 92, wherein the controller is configured to cause the generation of a certification information associated with the material.

99. (new) An apparatus as defined in claim 98, further comprising a printer operatively coupled to the controller to print at least some of information the certification information.

100. (new) An apparatus as defined in claim 98, further comprising a display device operatively coupled to the controller to display at least some of the certification information.